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Procedia - Social and Behavioral Sciences 144 (2014) 127 – 132

Procedia
Social and Behavioral Sciences5th Asia Euro Conference 2014

Dakar food: Between permanence and change. Adaptation to environmental context

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Abstract

In Senegal and Dakar in particular, overfishing and fisheries management policies focus mainly on export and generation of economic flows which lead to scarcity of fish in the sea and on the Dakar markets. Some species such as thiof are now endangered. Fish is a very important component of diet in Dakar. What impact do these changes have on Dakar inhabitants' food? How do people adapt and react to this situation in terms of food? Conducting a qualitative study on Dakar's consumers has allowed us to identify trends in the behaviour of dietary adaptations. Subsequently, a quantitative study enabled us to clarify the results by quantifying these trends. The mobilization of the food social space of Jean-Pierre Poulain (2012) helps us to describe the different dimensions of food and bring out the dynamics of each dimension. Concerning fish, the context described causes pressure on produce at landing and wholesalers, vendors and people of Dakar dispute the content of pirogues. The food system, especially fish, is affected: Some products travel many kilometres before reaching the consumer; yet are close to the sea. The edible space of most people of Dakar is composed of two staples: rice and fish, and peripheral foods. The situation leads some individuals to turn to meat and millet dishes with curd milk. This reduces the influence of cooks on the food of family members and change configurations of conviviality. These 'away from home' consumptions also affect the rhythms and daily food temporalities. The flexibility allowed by street consumption, less formal than consumption at home, enable people to escape the constraints imposed by the family rhythm. Food temporalities also appear during the season, very different in terms of supply of various products such as fish and vegetables. In terms of social differentiation, the consumption of fish plays an important role: the use of noble fish denotes a comfortable situation, which can be permanent or temporary, while the exclusive presence of small fish such as sardines in dishes refers to financial difficulties. Finally, whilst Dakar's rich diversify their diet, Dakar's poorest maintain the structure of the national dish: rice with fish (*ceebujen*) while impoverishing it.

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Peer-review under responsibility of the Scientific Committee of 5AEC2014.

Keywords : Dietary patterns; Food social space; Dakar; Changes

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1. Introduction

Senegal and Dakar in particular, is facing difficulties in the fishing sector. Fish, long seen as an inexhaustible resource for the entire planet, now suffers from overuse. In Senegal, it is a major, if not the main, natural resource economically recoverable by the state - in addition to the cultivation of groundnuts introduced by the colonial administration as a cash crop, but loses value against competition from other producing countries (MBodj, 1992). Thus, the political management of fisheries in Senegal, implemented by successive governments, has made the fishing industry a major economic sector by promoting fish exportations and opening up the Senegalese coastline to foreign ships (Chauveau, 1984). These policies, coupled with improved techniques of artisanal fishing, have resulted in overfishing. The country is currently facing a scarcity of fish both in the sea and in the Dakar markets, whereas the Dakarais' diet is largely based on fish (Leport, 2011).

The present study raises the following rather general question: what are the factors of inertia and changes in food patterns when there are tensions between a large population and finite natural resources? And focuses more particularly on answering the following question: How do Dakar inhabitants manage their diet, between permanence and change, when the accessibility of fish is decreasing?

2. Methodology

To answer this question, the chosen methodology is both qualitative and quantitative. The qualitative part includes 29 individual semi-structured interviews, 22 participant observations of food sessions (supply, preparation and consumption) and a focus group, all conducted with Dakar eaters. Interviews and observations took place in people's homes and in the neighbourhood of Ouakam, chosen for its socio-economic diversity. This qualitative study allowed us to identify trends in people's behaviour of dietary adaptation. After this first study, a quantitative study was carried out and allowed us to clarify the results by quantifying these trends. The study comprises a questionnaire filled out by 800 Dakar inhabitants selected by the method of cross-quota sampling - age, sex and residential area - according to the latest available census of 2002. The questionnaire was administered by a team of investigators in either Wolof or French, depending on the language in which the respondent was most comfortable.

3. Analysis results

The aim of this study is to describe and analyse the changes and developments in food in all its dimensions. Mobilization of Food Social Space of Jean-Pierre Poulain (2012) allows us to present the results methodically.

3.1. *The Dakar food system: Between internal and external factors*

The food system includes all the steps and players enabling food to reach the consumer from the crop or livestock area. In Senegal, this system is complex and combines both import and local circuits including for the most part, many intermediaries between the producer and the retailer. Food distribution happens in different places in Dakar: markets, shops, some supermarkets in the city, in street stalls and even from street vendors for some products. Fish is not an exception to this. Indeed, it is possible to buy fish directly from the fishermen on their return from fishing, but this is becoming increasingly rare and difficult to Dakar since the majority of landings is either bought by wholesalers, who sell fish to exporters or processing plants, or is sent to the large Pikine central market which centralizes domestic production for the local market. It is from this market that most of the fish sold in street markets come. It frequently happens that fish sold on stalls at the edge of Dakar's beaches have already made the trip to Pikine, (located in the suburbs), before returning to the beach for sale. Some of these fishes come from another landing point in Dakar or outside the city e.g. Kayar, Joal, Mbour and St. Louis. For example, the path of a fish landing in Soumbédioune Bay may seem like a real tourist excursion in Dakar: it is first sent to the big central market of Pikine (13 km away) where it is integrated with national statistics and is purchased by dealers who will put it 'on the shelves' of urban morning markets such as the Ouakam market (14 km away). At this stage, it is sold to a consumer or routed to Soumbédioune fish dock (7km away) to be sold in the 'afternoon' market. Arriving at the fish dock, consumers expect to find freshly-landed fish but mostly buy fish having already travelled nearly 34

km from the day before. This was not the case when the fish supply was abundant. The scarcity of fish exacerbates competition among exporters, processors and local consumers and promotes the development of supply systems locked by the more powerful (exporters and processors directors). Consumers clearly state: "We take that *yaboy* that is there, you know, because they don't want the *yaboy*" (Male, 25 years of age, February 2013). The better quality fish such as *thiof* (the white grouper), highly valued in Senegal, in particular for the preparation of *ceebujen* (rice and fish), are extremely rare on the Dakar stalls. Exports to countries in the sub-region concern smaller fish such as sardines or *yaboy* and cause supply problems for fish processors, including female processors who produce dried and smoked fish from these small fish (Dione, 2005). Dakar inhabitants are turning to other foods.

Some products such as stock cubes (*bouillon*) are sold individually in shops in the city. This process of unit sales or daily servings - oil, pepper, peanut butter, vegetables, meat, & eggs – corresponds to a daily economic management of food based on family incomes and the lack of storage capacity and refrigeration. 30% of 800 respondents in Dakar live without working refrigerators in 2014 (Leport, study in progress). Imported products also undergo this repackaging treatment in portions adapted to consumer demand. The *Vache qui rit*® cheese usually packed in boxes of 8, 16 or 24 servings are sold individually here; Nescafé® instant coffee is also sold in portions corresponding to the preparation of one cup, and fish is sold individually or by the kilo. The choice of quantity is mostly determined by price: women specify the type of product they want to buy and the price they can afford. Based on these two parameters, the vendor prepares the corresponding quantity. This daily event allows women to know the relationship between price and quantity. However, depending on price fluctuations, women operate 'live' adjustments by changing the type of fish or by substituting it for meat. Small fish such as sardines, which a few years ago were given to children directly on the beach, given the abundance of the resource, are now sold; sometimes at relatively high prices and have become an essential ingredient in the daily meal preparation of Dakar inhabitants, despite the negative image, often associated with poverty. Thus, the situation has tended to bring about quite a few changes, which, for some of them, break with the past in the Dakar Food System: single portion sales are widespread and affect products such as fish; in the same way, there is a significant tension between exportation, processing and local consumption of fish.

3.2. *Edible Space: A model focused on two main staples*

Fish and rice are the main staple foods in Dakar (Bricas 1992; Leport, 2011). However, the edible space, which corresponds to the products which individuals define as food among the products available in their environment based on biological, nutritional, symbolic and cultural criteria, seem to change and even expand in the context of globalization and faced with the challenges of the fishing sector. Faced with the declining availability of fish in markets, Dakar inhabitants adopt choice, and sometimes simultaneously apply a strategy of substitution, addition/deletion or modification to the structure of dishes. The most usual attitude used first seems to be a reduction in quality and/or quantity of fish used in dishes without changing its structure. *Sardinella* has a special place here as the fish substitute, allowing the element of fresh fish to be kept. It is common to find a small quantity of 'quality' or 'average' fish and a few sardines in the same dish to increase the overall quantity of fish. However, when economic circumstances worsen, the use of dried or smoked fish replacing fresh fish again allows the structure of the dish to be maintained. Leaving out the fish complete in preparing the meal sometimes leads to the use of meat - which is cheaper than the so-called "quality" fish but more expensive than small fish. In this case, the structure of the dish can be partly preserved as in the preparation of a dish of white rice served with *mafé* meat sauce (made with peanut paste), or completely changed if the meat is served in a soup for instance. The fish can also be left out to be replaced by millet dishes such as porridge or couscous, with or without curdled milk or peanut paste. In this context, millet takes on, or once again takes on, an important part in Dakar inhabitants' diet. Its lower cost than rice encourages its increasing consumption in the context of rising prices and the financial difficulties faced by some families in Dakar. Health considerations also promote the consumption of millet which presents a positive image (Alpha, 2007). Nearly 80 % of Dakar people interviewed during the quantitative phase of the study associate millet porridge with a positive effect on health. In contrast, rice is frequently associated with diabetes and is criticized based on health reasons; 86% of our sample agreed with the statement "We must limit the consumption of rice to protect us from

diabetes". In popular speeches, rice loses importance and fish remains highly valued, whereas, in practice, rice is always eaten almost daily and fish consumption decreases, for the above reasons.

3.3. *The culinary space: Decision-making and women's empowerment*

Food preparation can make consumable products through technical and symbolic measures carried out on food. In Senegal, dishes are usually prepared in two separate pots; one for cereal staples (rice, millet, maize) and the other for the sauce. Today and since the introduction of rice in Senegalese food, some dishes, including the national dish, rice and fish (*Ceebujen*), are prepared in a single pot (Bricas 1992; Bricas, 2008). However, according to several people interviewed, it seems that before the appearance of *ceebujen*, some ethnic groups, such as the Saloum or Ferlo Fulani, were accustomed to eating a very similar dish but in which cracked millet is the cereal base. "One pot" dishes (the cooking of the cereal base is made in the cooking water of other ingredients - vegetables, meat, fish - and thus, in the same pot) are not as new as believed, and *ceebujen* becomes a simple adaptation of these dishes by substituting millet by rice. In Dakar, non-cereal based dishes are also consumed (sweet potato or yam stew, braised fish, omelettes, etc.) but remain less frequent or even exceptional. The ingredients used are known but the cooking techniques and preparation methods differ with habits (Bricas, 1992). Food preparation, whatever happens, remains primarily a story of women. They hold the power to decide and make the choice of dish taking into account the budget which men give them (Broutin et al., 2008) but also, when it is possible, their own tastes, recommendations or requests from other family members or health considerations. The decision ultimately, is made by the person who goes to the market and cooks - or the woman of the house when there is an assistant cook. As one woman attested: "You do what you want. It is you who prepares the food, it's up to you. Here, it is the cook who decides" (female, 22 years of age, March 2013). Besides the food prepared in the family kitchen, buying street 'ready to eat' food is increasing and is part of a strategy of collective or individual economic survival (Ndoye et al., 2001). When financial difficulties do not allow three meals a day to be cooked, preparing dinner can be left out and so promotes the consumption of street food such as porridge or sandwiches. Thus, women can choose buying street food to feed their families, buy it and then bring it home for collective consumption, or let everyone sort out what s/he has in order to eat in the evening. In the latter case, consumption is more individualized. The choice of eating this street food by some members of the family can also help to reduce pressure on the family meal (Ag Bendeck, 1996). Financial difficulties are not the only reason why Dakar's inhabitants dine outside the home. The urban environment favours the mode of individualized life and emancipation vis-à-vis the family. The development of these practices limits the consumption of fish, especially in the evening, because the dishes sold are mainly based on millet, cowpea or bread with no meat or fish.

3.4. *Between home and outside the home: Food habits space*

This development of the use of eating outside the home is changing consumption patterns including the rules of conviviality. The number of meals eaten together around the bowl is decreasing at the expense of meals eaten outside the home: in the street, in a restaurant, alone, as a couple or with friends. Crenn and Hassoun (2014) have developed different forms of conviviality observed in fast food restaurants in Dakar, and speak of "urban pleasure as ostentatious as it is intimate and impulsive". The consumption of fast food in the historic district of Plateau refers to "family emancipation" often associated with going out with friends or as a couple and is valued publicly. In districts adjacent to Plateau, where fast food is emerging late, it is more part of the daily lives of residents for whom eating hamburger or shawarma adds or replaces the consumption of family meal and remains a public practice. Fast food in peripheral or suburban districts are part of a discreet logic. Their rooms are dark and allow customers to be discreet where the consumption of these products is associated with a certain selfishness for those who do not have the means to offer this type of food to all their family (Crenn and Hassoun, 2014).

In families, meals are mainly taken eating around the bowl where all those present in the house when the dish is served meet to share food. As explained by one individual "Sometimes you cook and, other people come. If the meal is served, everybody there has the right to eat, whether a family member or a stranger" (Female - 50 years of age - March 2013). Some only take one or two tablespoons before leaving the dish if they have already eaten before, if they do not like the dish served or are expected for the same meal in another place. However, those two spoonfuls

are important to signify their respect for the cook and trust in the host family. The sharing of a meal is of particular significance considering the health and symbolic risk inherent in the act of eating (Poulain, 2002). In contrast, the refusal of a meal is quickly interpreted by the cook as mistrust. Other people will leave the bowl when s/he finishes the meal until only two or three remain and are responsible for finishing the dish. In some cases, one person; usually a woman, takes care of distributing pieces of fish, meat, vegetables, adding sauce if necessary, and managing the distribution of ingredients in general. However, it often happens that everyone manages himself and grabs the ingredients that are accessible in order to possibly redistribute a part. The time taken to eat is often quite fast; usually five (5) minutes, even if sometimes there is discussion which extends the time. All these observations remain valid in 2014 in Dakar, but it is important to note some developments in the climate of rising prices. As mentioned above, an invitation to share a meal in a family cannot be refused. However, the financial difficulties faced by some families encourage people to ensure not to be present at the meal, or to only consume one or two spoonfuls in order not to increase the already great pressure regarding food on families.

3.5. Daily and seasonal food temporality: Large individual variations

Food prices are rising in Senegal, with an overall increase in the price index of 6.7 % in 2011, 2.5 % in 2012 and 1.3% in 2013 (ANSD, 2013). On one hand, this situation forces householders to increase the food budget if they can; on the other, women develop food strategies, including only cooking once a day and eating lunch leftovers instead of making dinner. In this case, fish consumption increases in frequency but decreases or remains unchanged in quantity. Breakfast is also sometimes made from dinner leftovers but in the majority of cases, only from a cereal base with a few tablespoons of sauce without any meat or fish. Individual snacking can also, as we have mentioned above, replace dinner and/or breakfast, which alters circadian food temporalities. Indeed, individual consumption is less subject to time constraints than domestic consumption. Significant changes in meals schedules are observable as, according to our quantitative study, breakfast is taken between 7am and 12am; lunch is consumed between 12 midday and 5pm, and finally dinner is held between 8pm and 11pm. These rhythms seem to follow the daily activities of protagonists and especially children, who sometimes come home from school at 2pm and people whose work times rhythm the time at which families eat. However, it is common to find that if only one person follows a shifted rhythm from the rest of the family, a portion of the dish is reserved for him/her which s/he eats on his return home. For seasonal temporalities, the rainy season is not favourable to fishing and thus, every year between July and October women develop strategies of adapting and substituting fish. This phenomenon is not new and mechanisms are in place. However, scarcity seems to be increasing and cooks say the situation during the dry season is worse than the rainy one compared to a few years ago in terms of availability of fish on the local market. From the rainy season to the dry season, difficulties have become widespread and seasonal strategies related to the rainy season have become part of Dakar people's daily life throughout the year.

3.6. The social differentiation space: Fish and food diversity as indicators of socio-economic status

If fish is so important to Dakar's people, it is partly because it is the essential element of *ceebujen* which is seen as the Senegalese national dish by the Senegalese themselves. Given the situation described in the scarcity of fish, *ceebujen* becomes an indicator of social differentiation. Indeed, the poorest people in Dakar maintain an almost daily consumption of this dish while impoverishing it by using fewer vegetables, less fish and less quality fish - while the wealthiest people reduce the frequency of *ceebujen* consumption but maintain the composition of the dish and quality of fish.

More widely and besides *ceebujen*, the socio-economic and educational level of people influence food diversity. Indeed, faced with the difficulties in getting fish and many advertising and health messages disseminated in the media, the wealthiest people are turning more to dishes without rice; especially for dinner. Raw vegetables, potatoes, cooked vegetables or millet with curd feature and the question of dietary diversity appears as a real and daily concern in these circumstances. Cooking methods and preparation are also changing to allow increasing room for grilling and boiling. The taste and sanitary quality of food ingredients prove to be a parameter carefully considered when the budget allows it. In contrast, the poorest and least educated focus their efforts on the acquisition of basic

foods: rice and fish - whether fresh, dried or smoked - and tend to reduce or eliminate other foods such as vegetables, fruit and milk. Thus, the main features of a dish e.g. *ceebujen*, prepared in a wealthy family are, according to respondents, the amount of fish and vegetables, the quality of fish and rice and the presentation of the dish.

4. Conclusion

In conclusion, the following question arises: given decreasing accessibility to fish in Dakar, what lessons on food developments the 'food social space' allows us to draw? Poulain (2012) discusses food as a set of constraints, both biological and environmental. The omnivore status of man means he needs to take from the natural environment around him food to give him energy as well as nutrients and micro-nutrients essential to his development and well-being. In Dakar, as elsewhere, these circumstances clash with individuals' way of life. From this point of view, the ecological constraints discussed here is the increasingly scarcity of fish. The food social space allows us to capture the different food dimensions subject to change in this particular context. It is an efficient tool to decrypt the components of the evolving food of Dakar in 2014.

Finally, in Dakar, the difficulties of the fishing industry are reflected daily in the diet of people who face this scarcity of fish. Strategies used are mainly to substitute fish with meat or dried fish, to replace fish dishes with cheaper dishes such as porridge millet with milk, or to diversify their dietary habits. These changes favour the emergence of identity and medical discourse as a justification for new eating habits. Thus *ceebujen* is subject to a dual discourse: it remains the valued national dish, in particular faced with foreigners or 'outsiders', but it is also responsible for causing various diseases such as diabetes or hyper-tension. Focusing in this study on Dakarois' dietary, it is the broader question of global food and tensions between finite natural resources and a growing population, which arises. Without addressing the issue of food availability, or the economic issue of accessibility even more directly, the study of food patterns and in particular through consumers themselves, allows us to understand the issues at stake of such tensions and understand populations' capacity to adapt, mutate and change, and also to evaluate the consequences of these changes on societies.

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